Montana Board of Oil and Gas Conservation
Environmental Assessment

Proposed Action: Approve Drilling Permit (Form 22)
Operator: Montana Land and Exploration, Inc
Well Name/Number: ML&E Bowes Dome 9-30-32N-20E
Location: Section 30 T32N R20E
County: Blaine **MT; Field (or Wildcat)** Bowes Field

Air Quality

(possible concerns)
Long drilling time: No, 4 to 5 days drilling time.
Unusually deep drilling (high horsepower rig): No, small single derrick drilling rig, about 500 HP (Estimated) to drill to 3,538' TD, Upper and Lower Bowes Formation test.
Possible H2S gas production: No H2S anticipated.
In/near Class I air quality area: No not in a Class I air quality area.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
X Air quality permit (AQB review)
__ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:

Comments: No special concerns – using small rig to drill to 3,538' TD. If there aren't any gas gathering systems nearby, associated gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)
Salt/oil based mud: No, freshwater, freshwater mud system.
High water table: No high water table anticipated.
Surface drainage leads to live water No, closest drainage is Lonetree Coulee directly adjacent to the location and an unnamed ephemeral drainage to the Milk River 3/10 of a mile to the northwest. The Milk River is about 4 miles to the Northwest.
Water well contamination: No water wells within a 1 mile radius. Surface hole in this well will be drilled to 430' with freshwater based drilling fluid. Steel surface casing will be run and cemented to surface to protect ground water. (Rule 36.22.1001)
Porous/permeable soils: No, sandy silty bentonitic soils.
Class I stream drainage: No Class I stream drainages.

Mitigation:
__ Lined reserve pit
X Adequate surface casing
__ Berms/dykes, re-routed drainage
__ Closed mud system
__ Off-site disposal of solids/liquids (in approved facility)
__ Other: Groundwater vulnerability area.

Comments: 430' of surface casing cemented to surface adequate to protect freshwater zones (Rule 36.22.1001) Also, air/air mist and/or fresh water mud systems to be used. Location is directly adjacent to Lonetree Coulee. After site construction an

inspection will be conducted to determine if pits will need to be lined and if a berm will need to be constructed on the Coulee side of location.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: No, stream crossings anticipated.
High erosion potential: No, small cut, up to 3.9' required and small fill, up to 2.7', required.
Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive, unused portion of drillsite will be reclaimed.
Unusually large wellsite: No, 250'X250' location size required.
Damage to improvements: Slight, surface use is grass and sagebrush grazing land.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
_X_ Stockpile topsoil
__ Stream Crossing Permit (other agency review)
_X_ Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
X Other Sage Grouse Program

Waiver._____

Comments: A new access road of 7/10 of a mile will be built off existing Gritskin Rd. Drilling fluids will remain in reserve pit after drilling and allowed to settle out solids. The fresh water left in reserve pit will be tested for suitability for land spreading. The remaining solids and fluids will be buried in the reserve pit.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: No residences within a 1 mile radius.
Possibility of H2S: No H2S anticipated.
Size of rig/length of drilling time: Small drilling rig/short 4 to 5 days drilling time.

Mitigation:
_X_ Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____

Comments: Adequate surface casing and operational BOP (3,000 psi annular) should mitigate any problems. (BOP's 3,000 psig annular) Rule 36.22.1014. No concerns

Wildlife/recreation

(possible concerns)
Sage Grouse: No.
Proximity to sensitive wildlife areas (DFWP identified): No.
Proximity to recreation sites: None identified.
Creation of new access to wildlife habitat: No

Conflict with game range/refuge management: No
Threatened or endangered Species: Only species identified as threatened or endangered is the Pallid Sturgeon, Black-footed Ferret, and the Piping Plover. NH tracker website lists eleven (11) species of concern: Hoary Bat, Little Brown Myotis, Swift Fox, Great Blue Heron, Ferruginous Hawk, Peregrine Falcon, Long-billed Curlew, Northern Redbelly Dace, Iowa Darter, Pearl Dace, and Sauger.

Mitigation:
__ Avoidance (topographic tolerance/exception)
__Other agency review (DFWP, federal agencies, DNRC Trust Lands)
__ Screening/fencing of pits, drillsite
__ Other:_____
Comments: Private cultivated surface lands. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.. No concerns

Historical/Cultural/Paleontological

(possible concerns)
Proximity to known sites: None identified
Mitigation
__ avoidance (topographic tolerance, location exception)
other agency review (SHPO, DNRC Trust Lands L, federal agencies)
__ Other:_____
Comments: Private cultivated surface lands. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.. No concerns.

Social/Economic

(possible concerns)
__ Substantial effect on tax base
__ Create demand for new governmental services
__ Population increase or relocation
Comments: No concerns.

Remarks or Special Concerns for this site

Well is a 3,538' Upper and Lower Bowes Formation test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur, but can be mitigated.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/ John Gizicki
(title:) Compliance Specialist
Date: September 19, 2016

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Blaine County water wells.
(subject discussed)

September 19, 2016 (date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Blaine County
(subject discussed)

September 19, 2016
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T32N R20E
(subject discussed)

September 19, 2016
(date)

Montana Cadastral Website
(Name and Agency)
Surface Ownership and surface use Section 30 T32N R20E
(subject discussed)

September 19, 2016 (date)

If location was inspected before permit approval:
Inspection date: 09/21/2016
Inspector: John Brown
Others present during inspection: _